



February 7, 2020

Marlene H. Dortch
Secretary
Federal Communications Commission
445 12th Street, S.W.
Washington, D.C. 20554

Re: Notice of Ex Parte Communication, ET Docket No. 18-295, GN Docket No. 17-183

Dear Ms. Dortch:

On February 5, Rick Kaplan, Robert Weller, Alison Neplokh and the undersigned, all of the National Association of Broadcasters (NAB) met with William Davenport of Commissioner Starks' office. On February 5, Robert Weller, Alison Neplokh and the undersigned also met separately with Erin McGrath of Commissioner O'Rielly's office. During these meetings, we discussed the attached presentation and our concerns with certain aspects of proposals to allow unlicensed operations in the 6 GHz band.

The Commission has the opportunity in this proceeding to provide unlicensed access to hundreds of megahertz of spectrum while protecting existing users. NAB is committed to working with the Commission and other stakeholders to develop appropriate safeguards, including frequency coordination and suitable power levels, to allow unlicensed operations to co-exist with fixed wireless uses in the 6 GHz band. However, the WiFi uses under consideration in this proceeding are simply incompatible with mobile broadcast operations used for electronic newsgathering – and no proposal advanced by any party to date will protect those mobile operations. As an example, NAB discussed the significant challenges raised by unlicensed operations in the 2.5 GHz band,¹ which have rendered some channels essentially unusable for licensed ENG operations.² We urge the Commission to recognize this fundamental incompatibility and acknowledge that unlicensed operations in those portions of the 6 GHz band allocated for mobile use cannot presently be authorized without creating entirely foreseeable risks for harmful interference. If technical solutions develop

¹ See 47 CFR 74.602 and 47 CFR 15.247. BAS Band A Channels 2450–2467 MHz and 2467–2483.5 MHz overlap with Wi-Fi Channels 7, 8, 9, 10, 11, and 12 (2431–2473 MHz).

² Comments of EIBASS at 7-8, ET Docket No. 18-295, GN Docket No. 17-183 (Feb 15, 2019).

that can reliably protect mobile operations in the U-NII-6 and U-NII-8 bands, the Commission can consider additional unlicensed opportunities in those bands at a later date and in a separate proceeding.³

Respectfully Submitted,

A handwritten signature in black ink, appearing to read 'Patrick McFadden', with a stylized, flowing script.

Patrick McFadden
Associate General Counsel,
National Association of Broadcasters

cc: William Davenport
Erin McGrath

³ NAB notes that Ofcom has proposed to allow unlicensed operations in a portion of the band under consideration here, 5925-6425 MHz. See Ofcom, Improving spectrum access for Wi-Fi, Consultation (Jan. 17, 2020), https://www.ofcom.org.uk/data/assets/pdf_file/0038/189848/consultation-spectrum-access-wifi.pdf.



Broadcast Use of 6 GHz

February 5, 2020

- Fixed Microwave Links
 - *E.g.*, Studio-to-Transmitter and Intercity Relay (STL/ICR)
 - Most in 6875–7125 MHz (“U-NII-8”)
 - Engineered for high reliability
 - Standard frequency coordination practices generally apply (TIA TSB-10)
 - Facilities included in ULS
- Mobile ENG
 - *E.g.*, Portable Cameras and News Trucks
 - Most in 6425 -- 6525 MHz (“U-NII-6”)
 - 6875 -- 7125 MHz used in many large urban markets
 - Opportunistic use with no formal coordination
 - No database of ENG operations
 - On-site, near real-time coordination used at large events

Vislink Camera Back 6 GHz Transmitter



Temporary Fixed Link (74.24)

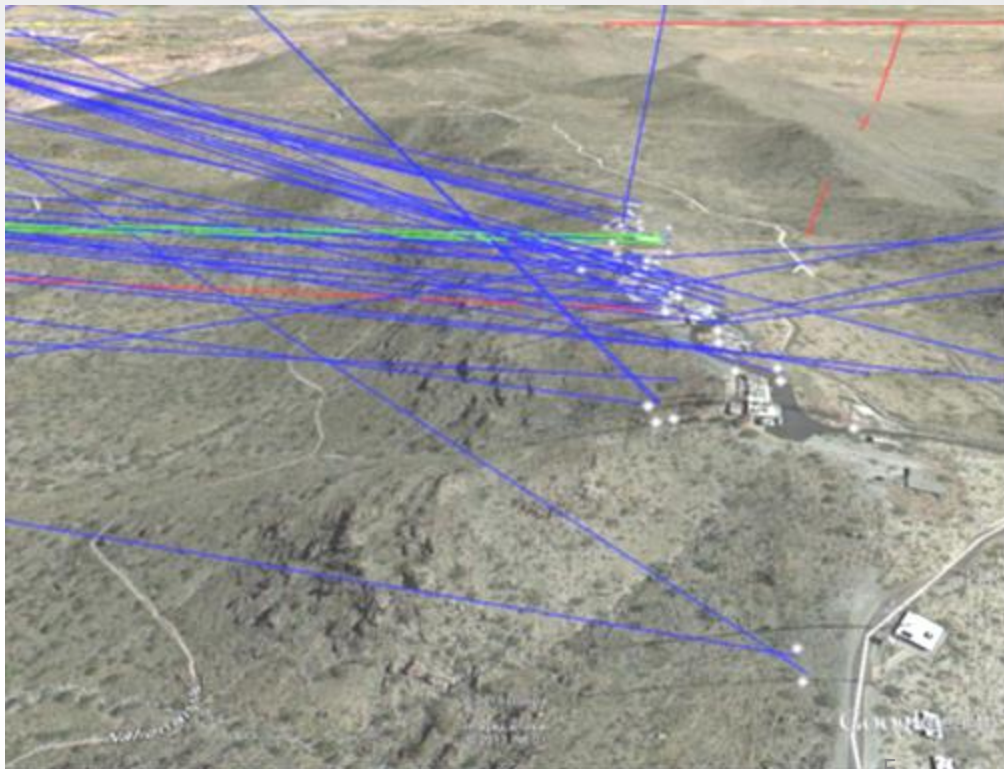


Broadcast ENG Sites Have High RF “Visibility”

Empire State Building



South Mountain (Phoenix)

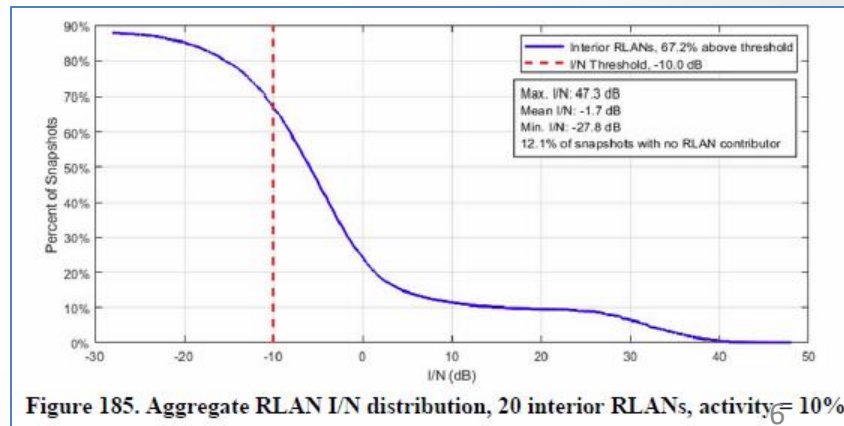


Key Results – Indoor Camera

- Example case:
 - ~2/3 of simulations exceed I/N threshold

Table 13. Interior analysis summary results

Number of RLANs	Activity (%)	% RLAN max. single-entry above I/N threshold	% RLAN aggregate above I/N threshold	% of snapshots with no RLAN contributor	Max. number of RLAN contributors
4	10	18.8	19.1	65.6	4
4	0.44	0.9	0.9	98.2	2
20	10	63.4	67.2	12.1	10
20	0.44	4.2	4.2	91.6	4
50	10	91.7	95.3	0.5	18
50	0.44	10.2	10.3	80.2	5



Some Results – Outdoor Camera

- IX is a strong function of ENG truck antenna height; 15m is typical
- Most IX from indoor RLANs
- In example case, ~1/2 of indoor RLANs were above IX threshold

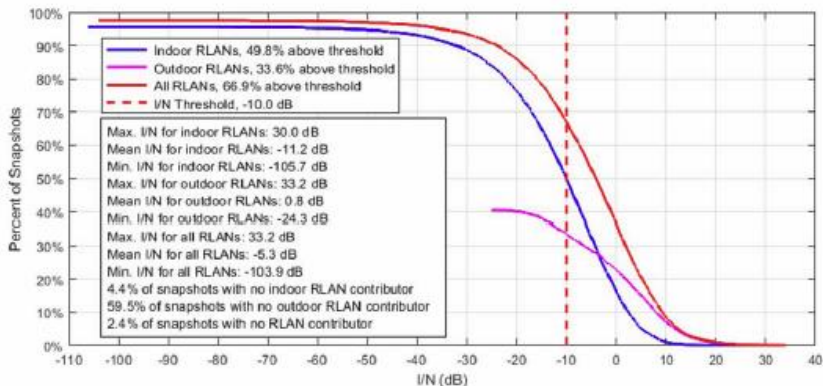
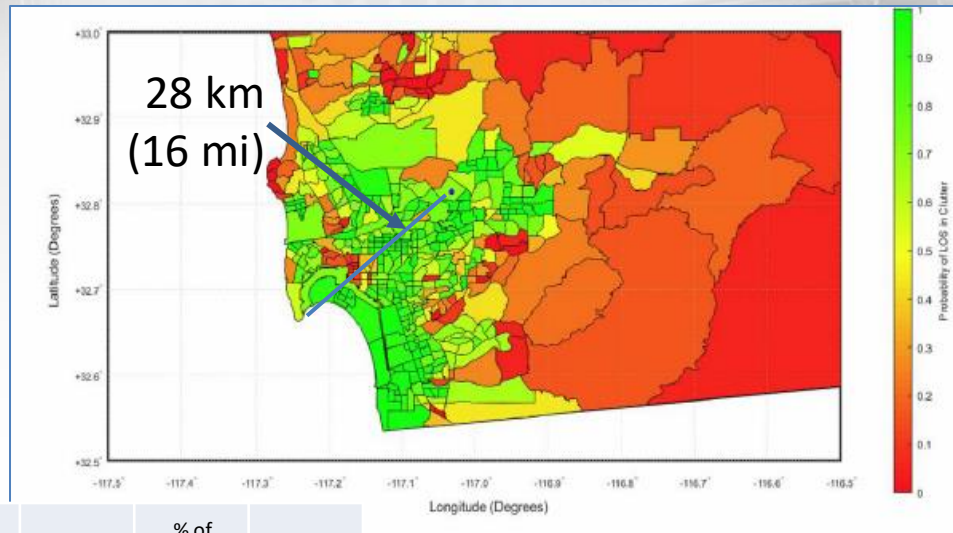


Figure 154. Aggregate RLAN I/N distribution, PG County Courthouse ENG truck, activity 10%, sector antenna at 15 m height, antenna azimuth angle = 290 degrees (random angle)

ENG receiver location	Rx antenna	Activity (%)	% Indoor RLAN max. single-entry above I/N threshold	% Outdoor RLAN max. single-entry above I/N threshold	% Indoor RLAN aggregate above I/N threshold	% Outdoor RLAN aggregate above I/N threshold	% All RLANs aggregate above I/N threshold
DC ENG Truck	Omni 1.5 m	10	15.6	4.2	15.7	4.2	19.2
DC ENG Truck	Omni 15 m	10	38	11.9	39.2	11.9	46.6
DC ENG Truck	Omni 1.5 m	0.44	0	0	0	0	0
DC ENG Truck	Omni 15 m	0.44	2.2	0.5	2.2	0.5	2.7
PG ENG Truck	Omni 1.5 m	10	0.2	0.2	0.2	0.2	0.4
PG ENG Truck	Omni 15 m	10	22.5	29.1	25.6	29.4	48.7
PG ENG Truck	Omni 1.5 m	0.44	0	0	0	0	0
PG ENG Truck	Omni 15 m	0.44	1	1.4	1	1.4	2.5
DC ENG Truck	Sector 1.5 m	10	16.8	4.4	16.9	4.4	20.5
DC ENG Truck	Sector 15 m	10	41.5	12.3	42.5	12.3	49.6
DC ENG Truck	Sector 1.5 m	0.44	0.9	0.2	0.9	0.2	1.1
DC ENG Truck	Sector 15 m	0.44	2.2	0.5	2.2	0.5	2.7
DC ENG Truck	Sector 1.5 m	10	14.3	4.3	14.5	4.3	18.2
DC ENG Truck	Sector 15 m	10	34.7	11.5	35.9	11.5	43.4
DC ENG Truck	Sector 1.5 m	0.44	0.7	0.2	0.7	0.2	0.9
DC ENG Truck	Sector 15 m	0.44	1.9	0.5	1.9	0.5	2.5
PG ENG Truck	Sector 1.5 m	10	0.2	0.2	0.2	0.2	0.4
PG ENG Truck	Sector 15 m	10	46.5	33.4	49.8	33.6	66.9
PG ENG Truck	Sector 1.5 m	0.44	0	0	0	0	0
PG ENG Truck	Sector 15 m	0.44	2.8	1.9	2.8	1.9	4.6
PG ENG Truck	Sector 1.5 m	10	0.4	0.3	0.4	0.3	0.6
PG ENG Truck	Sector 15 m	10	21.6	26.2	24.3	26.5	45.2
PG ENG Truck	Sector 1.5 m	0.44	0	0	0	0	0
PG ENG Truck	Sector 15 m	0.44	0.9	1.4	0.9	1.4	2.3

Some Results – ENG Truck to Central Site

- Prominence of ENG Central Receive sites means LOS to RLANs at large distances
- IX nearly certain and continuous
 - Even without outdoor RLANs



ENG receiver location	Rx antenna	Activity (%)	Antenna azimuth angle (deg)	% Indoor RLAN max. single-entry above I/N threshold	% Outdoor RLAN max. single-entry above I/N threshold	% Indoor RLAN aggregate above I/N threshold	% Outdoor RLAN aggregate above I/N threshold	% All RLANs aggregate above I/N threshold	% of snapshots with no indoor RLAN contributor	% of snapshots with no outdoor RLAN contributor	% of snapshots with no RLAN contributor
Cowles Mtn.	ProScan	10	227	100	100	100	100	100	0	0	0
Cowles Mtn.	ProScan	0.44	227	83.1	51.6	91.9	54.5	97.4	0	0	0
Cowles Mtn.	ProScan	10	194	100	100	100	100	100	0	0	0
Cowles Mtn.	ProScan	0.44	194	86.5	61.2	95.8	65.5	99.2	0	0.1	0
Cowles Mtn.	ProScan	10	108	100	99.3	100	100	100	0	0	0
Cowles Mtn.	ProScan	0.44	108	46	20.5	50.7	22.5	65	0	0.1	0